

SPECIFICATION

TO ALL WHOM IT MAY CONCERN:

BE IT KNOWN THAT WE, TERUYUKI MARUYAMA, a citizen of Japan residing at Kanagawa, Japan, MASAYOSHI MIYAMOTO, a citizen of Japan residing at Kanagawa, Japan, HIROSHI KAKII, a citizen of Japan residing at Tokyo, Japan, TAKASHI YOSHIKAWA, a citizen of Japan residing at Kanagawa, Japan and YUICHI ARAUMI, a citizen of Japan residing at Kanagawa, Japan have invented certain new and useful improvements in

FILING SYSTEM WHICH PROVIDES INCREASED AVAILABILITY
OF IMAGE DATA STORED THEREIN

of which the following is a specification:-

1 BACKGROUND OF THE INVENTION

(1) Field of the Invention

The present invention relates to a filing system including a data processing apparatus which captures image data, stores it on a storage device, transmits it to another data processing device, and copies it onto a copy sheet. The present invention also relates to a data processing method and a computer readable medium which are incorporated into the data processing apparatus in the filing system.

(2) Description of the Related Art

INS. A1 > Recently, a number of centralized mainframe computers are shared by all users in an organization, and supplanted by workstations and personal computers located in departmental user rooms and private offices. With the increased number of machines has come the need to move data and files from one machine to another. A filing system is one approach to solving the file transfer problem. In the filing system, shared data is placed on a file server, and, when needed, individual machines are made to access data files located on the remote file server. This approach works well when the number of files that need to be exchanged is not small.

INS. A2 > In a conventional filing system, a data processing device (for example, a personal computer) is

1 provided with a scanner, and the scanner captures image
data by optically scanning the document to be copied or
transmitted. However, when the number of documents that
need to be exchanged between authorized users is large,
5 the data capturing using the scanner becomes a
considerably time-consuming task, and the access to the
image data on the remote file server from the data
processing device needs a burden-some operation. This
causes the delay of implementation of the conventional
10 filing system. In addition, the contents of documents
having confidential data, such as a password for the file
access, may be revealed to the operator of the data
processing device during the data capturing. The
conventional filing system has such a problem of data
15 security.

By taking account of the above-described
problems, the inventors of the present invention have
noted that image data of documents, which need to be
stored in a filing system, are always first captured using
20 scanners of copiers or facsimiles for corporate meeting
uses or business purposes, and subsequently translated
into usable signals using analog-to-digital converters.
Hence, in order to eliminate the above-described problems,
the inventors have designed a data processing apparatus
25 and method, for use in the filing system, which creates

1 identifications of the authorized users for such documents
when the image data are first captured, and has the image
data and the identifications stored on a storage medium of
the filing system in a such a manner that the stored image
5 data are subsequently accessible by the authorized users
using the identifications. Further, the filing system
must be designed to ensure security of the image data
stored therein.

10 SUMMARY OF THE INVENTION

An object of the present invention is to
provide a novel, useful filing system in which the above-
described problems are eliminated.

Another object of the present invention is
15 to provide a filing system which creates increased
operability and availability of image data that is stored,
reproduced, transmitted or retrieved for the authorized
users only, while ensuring security of such image data in
the filing system.

20 Another object of the present invention is
to provide a data processing method which creates
increased operability and availability of image data that
is stored, reproduced, transmitted or retrieved for the
authorized users only, while ensuring security of such
25 image data.

1 Another object of the present invention is
2 to provide a computer readable medium which creates
3 increased operability and availability of image data that
4 is stored, reproduced, transmitted or retrieved for the
5 authorized users only, while ensuring security of such
6 image data.

7 The above-mentioned objects of the present
8 invention are achieved by a filing system in which at
9 least one data processing apparatus is connected to a file
10 server via a transmission path, the filing system
11 including: a data capturing unit which captures image data
12 of a document into the data processing apparatus; a data
13 storing unit which stores the image data captured by the
14 data capturing unit, onto an image storage medium; an
15 authorized user identifying unit which acquires one or a
16 plurality of owner identifications when the image data is
17 captured by the data capturing unit; an access management
18 unit which correlates the owner identifications with the
19 image data stored by the data storing unit, and allows the
20 stored image data to be accessed when any of the owner
21 identifications correlated with the image data is
22 verified; and a data output unit which outputs the image
23 data in a readable manner by retrieving the stored image
24 data of the image storage medium when the access to the
25 image data is allowed by the access management unit.

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1 The above-mentioned objects of the present
invention are achieved by a data processing method for use
in a data processing apparatus of a filing system, the
data processing method including the steps of: capturing
5 image data of a document into the data processing
apparatus; storing the captured image data onto an image
storage medium; acquiring one or a plurality of owner
identifications when the image data is captured into the
data processing apparatus; correlating the owner
10 identifications with the image data stored on the image
storage medium; allowing the stored image data to be
accessed when any of the owner identifications correlated
with the image data is verified; and outputting the image
data in a readable manner by retrieving the stored image
15 data of the image storage medium when the access to the
image data is allowed.

 The above-mentioned objects of the present
invention are achieved by a computer readable medium
storing program code for causing a processor to execute an
20 authorized user identifying processing on a data
processing apparatus, the computer readable medium
including: a first program code device which causes the
processor to capture image data of a document into the
data processing apparatus; a second program code device
25 which causes the processor to store the captured image

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1 data onto an image storage medium of the data processing
2 apparatus; a third program code device which causes the
3 processor to acquire one or a plurality of owner
4 identifications when the image data is captured; a fourth
5 program code device which causes the processor to
6 correlate the owner identifications with the image data
7 stored on the image storage medium, and causes the
8 processor to allow the stored image data to be accessed
9 when any of the owner identifications correlated with the
10 image data is verified; and a fifth program code device
11 which causes the processor to output the image data in a
12 readable manner by retrieving the stored image data of the
13 image storage medium when the access to the image data is
14 allowed.

15 In the data processing apparatus and method
16 in the filing system of the present invention, the
17 identifications of the authorized users for the documents
18 that need to be exchanged are created when the image data
19 are first captured, and the image data and the
20 identifications are stored together on the storage medium
21 of the filing system in a such a manner that the stored
22 image data are subsequently accessible by the authorized
23 users using the identifications. The data processing
24 apparatus and method in the filing system of the present
25 invention are effective in providing increased operability

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1 and availability of image data that is stored, reproduced,
transmitted or retrieved for the authorized users only,
while ensuring security of such image data in the filing
system.

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BRIEF DESCRIPTION OF THE DRAWINGS

Other objects, features and advantages of the present invention will become more apparent from the following detailed description when read in conjunction with 10 the accompanying drawings in which:

FIG. 1 is a block diagram of a first embodiment of the filing system of the present invention;

FIG. 2 is a block diagram of a file server device in the filing system of the present invention;

15 FIG. 3 is a diagram showing an initial page on a touch panel of a data processing apparatus in the filing system;

FIG. 4 is a diagram showing a next page on the touch panel;

20 FIG. 5 is a diagram showing a user selected condition of the initial page on the touch panel;

FIG. 6 is a diagram showing a group selected condition of the next page on the touch panel;

25 FIG. 7 is a diagram showing a capture inhibition condition of the initial page on the touch

1 panel;

FIG. 8 is a diagram showing a warning message in the initial page on the touch panel;

5 FIG. 9A and FIG. 9B are a flowchart for explaining a user ID acquisition process carried out by a controller of the filing system;

FIG. 10 is a flowchart for explaining an image data capture process carried out by the controller of the filing system;

10 FIG. 11 is a flowchart for explaining an image data transmission process carried out by the controller of the filing system;

FIG. 12 is a flowchart for explaining an image data storage process carried out by the controller or the file server in the filing system;

15 FIG. 13 is a flowchart for explaining an image data access process carried out by the controller or the file server in the filing system;

FIG. 14 is a flowchart for explaining a retrieval process carried out by the controller or the file system in the filing system;

FIG. 15 is a block diagram of a second embodiment of the filing system of the present invention;

25 FIG. 16 is a diagram of a user/function select page on the touch panel of the filing system;

1 FIG. 17 is a diagram of a copy operation
page on the touch panel of the filing system;

5 FIG. 18A and FIG. 18B are a flowchart for
explaining a user ID acquisition and operation mode
process carried out by a control unit of the filing
system;

10 FIG. 19 is a block diagram of a third
embodiment of the filing system of the present invention;

15 FIG. 20 is a flowchart for explaining an
image data capture process carried out by a control unit
of the filing system; and

20 FIG. 21 is a diagram showing a standard
user ID setting page on a display device of a client data
processing apparatus in the filing system.

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DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

20 A description will now be given of the
preferred embodiments of the present invention with
reference to the accompanying drawings.

25 FIG. 1 shows a first embodiment of the
filing system of the present invention.

25 In the filing system of FIG. 1, a data
processing apparatus 100 and a file server 108 are
interconnected by a transmission path 107. The
transmission path 107 is, for example, an Ethernet cable,

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1 and a plurality of data processing apparatuses (or the
clients) may be connected to the file server 108 via the
transmission path 107. In the present embodiment, the
data processing apparatuses and the file server
5 interconnected together constitute a local area network or
an Intranet. The data processing apparatus 100 acts as a
backup system which stores image data handled by the user,
and, when needed, it serves as a security system which
allows only authorized users to access the stored image
10 data.

As shown in FIG. 1, the data processing
apparatus 100 includes a controller 110. A scanner 101, a
printer 102, a communication control unit (CCU) 103, an
image storage device 104, a touch panel 105, and a control
15 keyboard 106 are connected to the controller 110. The
scanner 101 captures image data by optically scanning a
document to be copied or transmitted. The printer 102
records the captured or received data on a copy sheet and
outputs the copy sheet. The CCU 103 is connected to a
20 public switched telephone network (PSTN) via a
communication line 109. When transmitting or receiving
image data, the CCU 103 executes circuit switching
procedures in order to connect the controller 110 to or
disconnect the controller 110 from the PSTN via the
25 communication line 109. The CCU 103 includes an internal

1 modem unit and carries out facsimile transmission
procedures through modulation and demodulation of image
data and protocol signals performed by the modem unit.
The image storage device 104 stores image data or image
5 data files, which are captured or received, on a storage
medium (for example, a magnetic disk). The touch panel
105 displays operational messages and inputs control
indications. The control keyboard 106 inputs device
driving conditions, device states, and user settings and
10 commands.

In the data processing apparatus 100, the controller 110 includes a central processing unit (CPU), a read-only memory (ROM) and a random access memory (RAM). The CPU reads out a control program from the ROM, 15 transfers it to the RAM, and then performs the overall system control processes for the elements 101-106 in accordance with the control program. The CPU controls the ROM so as to install device driving conditions and management data into the ROM.

20 In the present embodiment, each of control programs related to the flowcharts of FIG. 9A through FIG. 14 (which will be described later) is program code instructions stored in a memory of the data processing apparatus 100. The memory of the data processing apparatus 100 is, for example, the ROM of the controller 25

1 110. The memory corresponds to a computer readable medium
in the claims. The computer readable medium includes any
instruction storage device, such as, magnetic disks
including floppy disks, optical disks including CD-ROMs,
5 magneto-optical disks including MOs, semiconductor memory
cards such as IC cards and miniature cards and other types
of computer usable devices and media.

In the present embodiment, the memory of
the data processing apparatus 100 may store encoded or
10 non-encoded instructions. The instructions may be
installed to the ROM of the controller 110 first,
transferred to the RAM of the controller 110, and then
read by the CPU (or the processor) of the controller 110.
The memory of the data processing apparatus 100 may store
15 either all or a part of the instructions related to the
flowcharts of FIG. 9A through FIG. 14. Hereinafter, the
CPU of the controller 110 of the data processing apparatus
100 will be called the processor for the sake of
simplicity.

20 The data processing apparatus 100 has the
copying function to record a captured image data onto a
copy sheet by using the printer 102. The data processing
apparatus 100 has the facsimile function to transmit or
receive the image data via the PSTM by using the CCU 103.
25 Further, the data processing apparatus 100 has the print

1 function to record the image data, read from the image
storage device 104, to a copy sheet by using the printer
102. The controller 110 of the data processing apparatus
100 controls the image storage device 104 so as to allow
5 only the authorized users to access the image data or
files of the image storage device 104. The data
processing apparatus 100 transmits at a controlled time
the stored image data to the file server 108 via the
transmission path 107 so that the image data stored in the
10 file server 108 can be accessed by the data processing
apparatus 100.

FIG. 2 shows a file server 108 in the
filing system of the present invention. The file server
108 is constituted by a personal computer or a
15 workstation. As shown in FIG. 2, the file server 108
includes a network interface 202, a CPU 203, a ROM 204, a
RAM 205, a disk interface 206, a hard disk device 207, a
display interface 208, a display 209, a keyboard interface
210, and a keyboard 211. The CPU 203 reads out an
20 application program from the hard disk device 207,
transfers it to the RAM 205, and then performs the overall
system control processes on the elements 202 and 204-211
in accordance with the application program. The
configuration and functions of the elements 202-211 of the
25 file server 108 are essentially the same as those of a

1 known file server, and a description thereof will be
omitted unless otherwise specified.

In the file server 108 of FIG. 2, the
transmission path 107 (the Ethernet cable) is connected to
5 the network interface 202. As described above, the data
processing apparatuses (or the clients) and the file
server interconnected together constitute the local area
network. When needed, the controller 110 of the data
processing apparatus 100 transmits the image data to the
10 file server 108 via the transmission path 107, and the
file server 108 receives the image data through the
network interface 202, and the image data is stored on the
hard disk device 207. In this manner, the data processing
apparatus 100 and the file server 108, in the filing
15 system, store the image data, which is captured or
received, onto the image storage device 104 or the hard
disk device 207, and exchange the stored image data in an
interactive manner.

FIG. 3 shows an initial page displayed on
20 the touch panel 105 of the data processing apparatus 100
in the filing system. FIG. 4 shows a next page displayed
on the touch panel 105.

In the present embodiment, one of the two
pages is selectively displayed on the touch panel 105.
25 However, the number of pages displayed on the touch panel

1 105 for the purpose of authorized user ID acquisition
according to the present invention is not limited to two.
Alternatively, only one page, or three or more pages may
be displayed on the touch panel 105. It is necessary that
5 one or more authorized user ID acquisition pages be
displayed on the touch panel 105 wherein the
identifications of authorized users can be easily
recognized and any of the identifications can be easily
selected.

10 As shown in FIG. 3 and FIG. 4, there are
displayed on the touch panel 105 a number of user
selection buttons 302, a clear button 303, a capture-
inhibit button 304, an input-history indication region 305
with frequent selection user buttons 306, a next button
15 307, a previous button 308, an available-disk-space
indication region 309, a message indication region 310, a
public-mode button 311, and a number of group selection
buttons 401. In the present embodiment, when the next
button 307 on the initial page of the touch panel 105
20 shown in FIG. 3 is depressed, the next page shown in FIG.
4 appears on the touch panel 105. When the previous
button 308 on the next page of the touch panel 105 shown
in FIG. 4 is depressed, the initial page shown in FIG. 3
appears on the touch panel 105.

25 The data processing apparatus 100 is

1 configured such that the image data stored on the image
storage device 104, after the image data of the document
was captured and then it was copied or transmitted, is
exchanged between the authorized users. The access to the
5 stored image data is allowed only for the authorized
users. A plurality of authorized user identifications
(which will be called the user IDs) related to the data
processing apparatus 100 are predetermined for the purpose
of the authorized user ID acquisition according to the
10 present invention.

 Hereinafter, the authorized users are
classified into two categories: operators who actually use
the data processing apparatus 100 to process the image
data to be copied or transmitted; and owners who are
15 authorized to access the image data because of their job
responsibilities. Similarly, a plurality of operator
identifications (which will be called the operator IDs)
and a plurality of owner identifications (which will be
called the owner IDs) are also predetermined in a discrete
20 manner for the purpose of the authorized user ID
acquisition according to the present invention. The
operator IDs are used to determine who receive the copies
at the time of copying or transmitting the document, while
the owner IDs are used to determine who need to
25 subsequently access the stored image data after the

1 copying or the facsimile transmission. Further, a
plurality of group identifications (which will be called
the group IDs) are predetermined for the purpose of group
ID acquisition according to the present invention. The
5 group IDs are used to determine which of departmental
groups of an organization receives the copies or needs to
subsequently access the stored image data after the
copying or the facsimile transmission.

As shown in FIG. 3, the user IDs (which are
10 either the owner IDs or the operator IDs) are respectively
assigned to the user selection buttons 302. Suppose that
a power switch of the data processing apparatus 100 is
turned ON and the data processing apparatus 100 is now
operating. When any of the user selection buttons 302 of
15 the touch panel 105 shown in FIG. 3 are depressed or
touched by the operator, the controller 110 acquires
corresponding ones of the user IDs (the owner IDs or the
operator IDs) for the ON-state (depressed) user selection
buttons. The controller 110 correlates the user IDs (the
20 owner IDs or the operator IDs) with the image data which
is captured from the document and stored onto the image
storage device 104, and allows the stored image data to be
accessed when any of the user IDs correlated with the
image data is verified.

25 In the present embodiment, the authorized

1 user identifications (the user IDs) of the user selection
buttons 302 are arrayed in alphabetical order on the touch
panel 105 as shown in FIG. 3.

5 The frequent selection buttons 306 of the
input history indication region 305 shown in FIG. 3
indicate a list of the owner IDs which have the four
highest frequencies of selection of such authorized users
among all the owners related to the data processing
apparatus 100. In the present embodiment, when any of the
10 frequently selected user buttons 306 of the touch panel
105 are depressed or touched by the operator, the
controller 110 acquires corresponding ones of the owner
IDs for the ON-state (depressed) user buttons 306. The
controller 110 correlates the owner IDs with the image
15 data which is captured from the document and stored onto
the image storage device 104, and allows the stored image
data to be accessed when any of the owner IDs correlated
with the image data is verified.

In the touch panel 105 of the present
20 embodiment, the user selection buttons 302 and the
frequently selected user buttons 306 are displayed in
different colors so that they are easily distinguished
from each other.

The group selection buttons 401 shown in
25 FIG. 4 are to display the group IDs each indicative of a

1 departmental group to which the users related to the data
2 processing apparatus 100 belong. In the present
3 embodiment, when any of the group selection buttons 401 of
4 the touch panel 105 are depressed, the controller 110
5 acquires corresponding ones of the group IDs for the ON-
6 state (depressed) group selection buttons 401. The
7 controller 110 correlates the group IDs with the image
8 data which is captured from the document and stored onto
9 the image storage device 104, and allows the stored image
10 data to be accessed when any of the group IDs correlated
11 with the image data is verified. In this context, the
12 group ID acquisition is the same meaning as the owner ID
13 acquisition from the point of view of the controller 110.

14 FIG. 5 shows a user selected condition of
15 the initial page on the touch panel 105. FIG. 6 shows a
16 group selected condition of the next page on the touch
17 panel 105.

18 The user selected condition of FIG. 5
19 occurs when a "user 9" button 501 (or 502) on the initial
20 page of FIG. 3 is first depressed for the operator ID
selection of the "user 9", and then a "user 11" button 503
and a "user 12" button 504 on the initial page of FIG. 3
are subsequently depressed for the owner ID selection of
the "user 11" and the "user 12".

21 As shown in FIG. 5, the user 9 button 501

1 is included in the input-history indication region 305 and
the user 9 button 502 is one of the user selection buttons
302. In this case, when either the button 501 or the
button 502 is depressed at the first attempt, the operator
5 ID (the user 9) is selected and the controller 110
acquires it. At the same time, both the display colors of
the buttons 501 and 502 on the touch panel 105 are changed
to a separate color that is indicative of the operator ID
selection.

10 When the user 11 button 503 and the user 12
button 504 are depressed at the second attempt, the owner
IDs (the user 11 and the user 12) are selected and the
controller 110 acquires them. At the same time, both the
display colors of the buttons 503 and 504 on the touch
15 panel 105 are changed to a separate color that is
indicative of the owner ID selection.

The group selected condition of FIG. 6
occurs when a "group 9" button 601 on the next page of
FIG. 4 is depressed for the owner ID selection of the
20 "group 9". The owner ID (the group 9) is selected and the
controller 110 acquires it. At the same time, the
display color of the button 601 on the touch panel 105 is
changed to the separate color indicative of the owner ID
selection.

25 In the present embodiment, whether the

1 operator ID acquisition or the owner ID acquisition is
performed by the controller 110 depends on the sequence of
the user selection attempts on the touch panel 105. When
any of the selection buttons 302 and 306 are depressed at
5 the first attempt, one or a plurality of the operator IDs
corresponding to the depressed buttons are acquired by the
controller 110, and when any of the selection buttons 302
and 401 are depressed at the second attempt, one or a
plurality of the owner IDs corresponding to the depressed
10 buttons are acquired by the controller 110. However, the
present invention is not limited to this embodiment.
Alternatively, the owner ID acquisition may be performed
for the first attempt of the user selection and the
operator ID acquisition may be performed for the second
15 attempt.

In the user selected condition of FIG. 5,
when, for example, the user 11 button 503 is depressed
again, the owner ID acquisition of the user 11 is canceled
and the display color of the button 503 is returned to the
20 original color. In the group selected condition of FIG.
6, when the group 9 button 601 is depressed again, the
owner ID acquisition of the group 9 is canceled, and the
display color of the button 601 on the touch panel 105 is
returned to the original color.

25 FIG. 7 shows a capture inhibition condition

1 of the initial page on the touch panel 105.

The capture inhibition condition of FIG. 7 occurs when the capture-inhibit button 304 on the initial page of the touch panel 105 of FIG. 3 is depressed. When 5 the capture-inhibit button 304 is depressed, the controller 110 detects the depression of this button 304 and acquires a capture-inhibition identification. By this capture-inhibition identification, the controller 110 inhibits the scanner 101 from capturing image data by 10 optically scanning a document. The image storage device 104 no longer stores the image data supplied by the scanner 101, onto the storage medium.

When the capture-inhibit button 304 is depressed, the display color of the button 304 on the 15 touch panel 105 is changed to a different color that is indicative of the capture inhibition condition as shown in FIG. 7. When the capture-inhibit button 304 is depressed again, the data processing apparatus 100 is changed from the capture inhibition condition into the initial 20 condition, so that the image storage device 104 is allowed to store the image data supplied by the scanner 101, onto the storage medium. The display color of the button 304 in this case is returned to the initial color.

FIG. 8 shows a warning message in the 25 initial page on the touch panel 105.

1 As shown in FIG. 8, the available-disk-
space indication region 309 on the touch panel 105
indicates the amount of available storage of the image
storage device 104 in a diagram form. When the amount of
5 available storage of the image storage device 104 is below
a lower limit, a warning message that indicates lack of
the available storage of the image storage device 104
appears in the message indication region 310 of the touch
panel 105.

10 In the present embodiment, the controller
110 monitors the amount of the available storage of the
image storage device 104 and controls the touch panel 105
so as to display it in the available-disk-space indication
region 309. When the amount of the available storage of
15 the image storage device 104 is above the lower limit, the
controller 110 allows the image storage device 104 to
store the image data, supplied by the scanner 101, onto
the storage medium (the magnetic disk). When the amount
of the available storage of the image storage device 104
20 is below the lower limit, the controller 110 controls the
touch panel 105 to display the warning message in the
message indication region 310, and inhibits the image
storage device 104 from storing the image data onto the
storage medium. After the warning message is displayed,
25 the controller 110 controls the CCU 103 so as to transmit

1 the image data, supplied by the scanner 101, to the file
server 108 via the transmission path 107.

In the above-described embodiment, the
image data is transmitted from the data processing
5 apparatus 100 to the file server 108 when the amount of
the available storage of the image storage device 104 is
below the lower limit. However, the present invention is
not limited to this embodiment. For example, the
transmission of the image data to the file server 108 may
10 be performed by the data processing apparatus 100 every
day at a regular time.

The public-mode button 311 on the initial
page of the touch panel 105 inputs a public-mode
identification to the controller 110 when the button 311
15 is depressed. The controller 110 acquires the public mode
identification when the image data is captured by the
scanner 101. The controller 110 correlates the public-
mode identification with the image data which is captured
from the document and stored onto the image storage device
20 104, and allows the stored image data to be accessed by
all the authorized users when the public-mode
identification correlated with the image data is acquired.

The clear button 303 on the touch panel 105
inputs an initialization command to the controller 110
25 when the button 303 is depressed. The controller 110

1 detects the initialization command before the image data
is captured by the scanner 101. The controller 110
initializes the acquired owner identifications (or the
acquired operator identifications or the public-mode
5 identification) on the RAM into initial values when the
initialize command is detected.

As described above, the next button 307 on
the initial page of the touch panel 105 instructs the
controller 110 to display the next page on the touch panel
10 105. The previous button 308 on the next page of the
touch panel 105 instructs the controller 110 to display
the initial page on the touch panel 105.

FIG. 9A and FIG. 9B show a user ID
acquisition process carried out by the controller 110 of
15 the data processing apparatus 100 in the filing system of
FIG. 1.

The user ID acquisition process of FIG. 9A
and FIG. 9B is performed within an initial setting routine
which is started when the power switch of the data
20 processing apparatus 100 is turned ON. Hereinafter, the
CPU of the controller 110 is referred to as the processor.

At the start of the user ID acquisition
process of FIG. 9A, step S11 causes the processor to read
out all the user IDs and the group IDs from a user
25 information file of the image storage device 104 so that

1 they are transferred to the RAM of the controller 110. In
2 the present embodiment, this user information file is
3 stored, in advance, on the image storage device 104, and
4 all the user IDs, the group IDs and other matters which
5 are predetermined with respect to the data processing
6 apparatus 100 are contained in the user information file.

7 After the step S11 is performed, step S12
8 causes the processor to display a number of sets of
9 indication areas of the touch panel 105 based on the users
10 IDs and the group IDs read out at the step S11. The user
11 selection buttons 302 are displayed on the touch panel 105
12 in a sequence of the authorized user identifications being
13 defined in the user information file. Step S13 causes the
14 processor to determine whether an initialize command is
15 detected by the processor. The processor (the CPU of the
16 controller 110) includes a clock which measures an elapsed
17 time from a start of operation of the data processing
18 apparatus 100, and the initialize command is transmitted
19 to the processor when the elapsed time measured by the
20 clock exceeds a predetermined reference period. In
21 addition, when the entire data processing on the data
22 processing apparatus 100 is terminated, the initialize
23 command is transmitted to the processor.

24 When the result at the step S13 is
25 affirmative (or when the initialize command is detected),

1 step S24 causes the processor to initialize all the user
IDs, the group IDs and the other matters on the RAM into
initial values. After the step S24 is performed, step S40
causes the processor to initialize or clear the
5 measurement of the clock, and step S41 causes the
processor to initialize the displayed indication areas of
the touch panel 105 into the initial condition. After the
step S41 is performed, the control of the processor is
transferred to the step S13.

10 When the result at the step S13 is negative
(or when the initialize command is not detected), step S14
causes the processor to determine whether any input is
given onto the touch panel 105. When the result at the
step S14 is affirmative, step S15 is performed. Otherwise
15 the control of the processor is transferred to the step
S13.

Step S15 causes the processor to determine
whether the clear button 303 on the touch panel 105 is
depressed. When the clear button 303 is depressed, the
20 control of the processor is transferred to the above steps
S24, S40 and S41, so that all the user IDs, the group IDs
and the other matters on the RAM are initialized, the
measurement of the clock is cleared, and the displayed
indication areas of the touch panel 105 is cleared.
25 Otherwise step S16 causes the processor to determine

1 whether the capture-inhibit button 304 is depressed.

When the capture-inhibit button 304 is depressed at the step S16, step S25 causes the processor to determine whether the capture inhibition condition 5 already occurs on the data processing apparatus 100. When the result at the step S25 is negative, step S26 causes the processor to inhibit the scanner 101 from capturing the image data, and the data processing apparatus 100 is set in the capture inhibition condition. When the result 10 at the step S26 is affirmative, step S27 causes the processor to cancel the capture inhibition condition. In the latter case, the processor allows the scanner 101 to capture the image data, and the data processing apparatus 100 is returned to the initial condition. After the step 15 S26 or the step S27 is performed, the control of the processor is transferred to the above steps S40 and S41.

When the capture-inhibit button 304 is not depressed at the step S16, step S17 causes the processor to determine whether the capture inhibition condition 20 already occurs on the data processing apparatus 100. When the result at the step S17 is affirmative, the control of the processor is transferred to the above steps S40 and S41. Otherwise the control of the processor is transferred to step S18 shown in FIG. 9B.

25 As shown in FIG. 9B, step S18 causes the

1 processor to determine whether the next button 307 is
2 depressed. When the next button 307 is depressed, step
3 S28 causes the processor to display the next page on the
4 touch panel 105 as shown in FIG. 4. After the step S28 is
5 performed, the control of the processor is transferred to
6 the above steps S40 and S41. When the next button 307 is
7 not depressed, step S19 causes the processor to determine
8 whether the previous button 308 is depressed. When the
9 previous button 308 is depressed at the step S19, step S29
10 causes the processor to display the initial page on the
11 touch panel 105 as shown in FIG. 3. After the step S29 is
12 performed, the control of the processor is transferred to
13 the above steps S40 and S41.

When the previous button 308 is not
15 depressed at the step S19, step S20 causes the processor
16 to determine whether any user ID acquisition is already
17 performed. When the result at the step S20 is negative
18 (or when the user ID is selected for the first time), step
19 S21 causes the processor to determine whether the user
20 selection buttons 302 on the touch panel 105 are
21 depressed. When the user selection buttons 302 are not
22 depressed, the control of the processor is transferred to
23 the above steps S40 and S41. When any of the user
24 selection buttons 302 are depressed, step S22 causes the
25 processor to acquire one or a plurality of the operator

1 IDs corresponding to the depressed user selection buttons
302. After the step S22 is performed, step S23 causes the
processor to increment a user selection count on the RAM
for each of the acquired operator IDs. That is, the
5 processor records the latest user selection counts (the
input history) of the operator IDs to the RAM. After the
step S23 is performed, the control of the processor is
transferred to the above steps S40 and S41.

When any user ID acquisition is already
10 performed (or when the user ID is subsequently selected)
at the step S20, step S30 causes the processor to
determine whether the user selection buttons 302 or the
group selection buttons 401 on the touch panel 105 are
depressed. When the selection buttons 302 or 401 are
15 depressed at the step S30, step S36 causes the processor
to determine whether the owner IDs (one or a plurality of
the owner IDs) corresponding to the depressed selection
buttons 302 or 401 are already acquired. When the owner
IDs are already acquired at the step S36, step S37 causes
20 the processor to omit the owner IDs from the owner ID
acquisition. When the owner IDs are not yet acquired (or
when the owner IDs are selected for the first time) at the
step S36, step S38 causes the processor to acquire the
owner IDs (one or a plurality of the owner IDs)
25 corresponding to the depressed selection buttons 302 or

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1 401. After the step S38 is performed, step S39 causes the
processor to increment a user selection count on the RAM
for each of the acquired owner IDs. That is, the
processor records the latest user selection counts (the
5 input history) of the owner IDs to the RAM at the step
S39. After the step S37 or the step S39 is performed, the
control of the processor is transferred to the above steps
S40 and S41.

When none of the selection buttons 302 and
10 401 are depressed at the step S30, step S31 causes the
processor to determine whether the public-mode button 311
on the touch panel 105 is depressed. When the public-mode
button 311 is not depressed, the control of the processor
is transferred to the above steps S40 and S41. When the
15 public-mode button 311 is depressed, step S32 causes the
processor to determine whether the public mode ID is
already acquired. When the result at the step S32 is
affirmative (or when the button 311 is subsequently
depressed), step S33 causes the processor to cancel the
20 acquired public mode ID on the RAM so that the captured
image data is not correlated with the public mode ID (the
non-public mode).

When the result at the step S32 is negative
(or when the button 311 is depressed for the first time),
25 step S34 causes the processor to acquire the public mode

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1 ID so that the captured image data is correlated with the
public mode ID, and all the authorized users are allowed
to access the stored image data (the public mode). After
the step S34 is performed, step S35 causes the processor
5 to initialize all the user IDs, the group IDs and the
other matters on the RAM into the initial values. After
the step S33 or the step S35 is performed, the control of
the processor is transferred to the above steps S40 and
S41.

10 As described above, in the user ID
acquisition process of FIG. 9A and FIG. 9B, when any of
the selection buttons 302 and 306 are depressed at the
first attempt, one or a plurality of the operator IDs
corresponding to the depressed buttons are acquired by the
15 controller 110, and when any of the selection buttons 302
and 401 are depressed at the second attempt, one or a
plurality of the owner IDs corresponding to the depressed
buttons are acquired by the controller 110. When the
initialize command is detected upon the time-over event,
20 the clear button depression or the entire data processing
end, all the user IDs, the group IDs and the other matters
on the RAM are initialized by the controller 110.

25 FIG. 10 shows an image data capture process
carried out by the controller 110 of the filing system of
FIG. 1.

1 The image data capture process of FIG. 10
is performed in parallel with the user ID acquisition
process of FIG. 9A and FIG. 9B, and the execution thereof
is started immediately before the start of the copy,
5 facsimile or print processing of the data processing
apparatus 100. Hereinafter, the CPU of the controller 110
is referred to as the processor.

As shown in FIG. 10, at the start of the
image data capture process, step S101 causes the processor
10 to determine whether a start of the image data capturing
of the scanner 101 is detected. When the result at the
step S101 is negative, the processor repeats performing
the step S101. When the result at the step S101 is
affirmative, step S102 causes the processor to read the
15 authorized user IDs from the results of the user ID
acquisition process of FIG. 9A and FIG. 9B.

After the step S102 is performed, step S103
causes the processor to determine whether an end of the
image data capturing by the scanner 101 is detected. When
20 the result at the step S103 is negative, the processor
repeats performing the step S103. When the result at the
step S103 is affirmative, step S104 causes the processor
to determine whether the capture-inhibition identification
is detected. When the result at the step S104 is
25 affirmative, the control of the processor is transferred

1 to the above step S101.

When the result at the step S104 is negative, step S105 causes the processor to create an image data file on the image storage device 104 based on 5 the acquired image data. After the step S105 is performed, step S106 causes the processor to determine whether the authorized user IDs are acquired. When the result at the step S106 is negative, step S107 causes the processor to acquire a standard user ID (the default 10 setting data) as the operator ID. After the step S107 is performed, the control of the processor is transferred to step S108.

When the result at the step S106 is affirmative, step S108 causes the processor to add the 15 user information file to the image data file. The user information file is created based on all the authorized user IDs (the user IDs and the group IDs). After the step S108 is performed, step S109 causes the processor to transmit a file creation notice to an image data 20 transmission control program (which will be described later with reference to FIG. 11). After the step S109 is performed, step S110 causes the processor to monitor the amount of the available storage of the image storage device 104 and display it in the available-disk-space 25 indication region 309 on the touch panel 105.

1 After the step S110 is performed, step S111
causes the processor to determine whether the amount of
the available storage of the image storage device 104 is
above the lower limit. When the result at the step S111
5 is affirmative, the control of the processor is
transferred to the step S101. In this case, the
controller 110 allows the image storage device 104 to
store the image data, supplied by the scanner 101, onto
the storage medium of the image storage device 104. On
10 the other hand, when the result at the step S111 is
negative (the amount of the available storage of the image
storage device 104 is below the lower limit), step S112
causes the processor to display the above-described
warning message in the message indication region 310 on
15 the touch panel 105. After the step S112 is performed,
the control of the processor is transferred to the step
S101. In this case, the controller 110 inhibits the image
storage device 104 from storing the image data onto the
storage medium of the image storage device 104.

20 When the above-described image data capture
process of FIG. 10 is carried out, the image data file
(containing the acquired image data) with the user
information file (containing the authorized user IDs)
attached thereto can be stored on the storage medium of
25 the image storage device 104 or on the storage medium of

1 the file server 108. When any authorized user ID is not
acquired, the standard user ID is acquired as the operator
ID and the resulting user information file is stored.
After the file creation notice is transmitted, the amount
5 of the available storage of the image storage device 104
is monitored and displayed into the available-disk-space
indication region 309 on the touch panel 105.

FIG. 11 shows an image data transmission
process carried out by the controller 110 of the filing
10 system of FIG. 1.

The image data transmission process of FIG.
11 is performed in parallel with the user ID acquisition
process of FIG. 9A and FIG. 9B, and the execution thereof
is started after the end of the step S109 within the image
15 data capture process of FIG. 10. Hereinafter, the CPU of
the controller 110 is referred to as the processor. The
image data transmission process of FIG. 11 is performed
according to the image data transmission control program
described above.

20 As shown in FIG. 11, at the start of the
image data transmission process, step S201 causes the
processor to determine whether the file creation notice,
which has been transmitted at the step S109 of FIG. 10, is
received. When the result at the step S201 is negative,
25 the processor repeats performing the step S201.

1 When the result at the step S201 is
affirmative (or when the file creation notice is
received), step S202 causes the processor to transmit the
user information file to the image storage device 104 or
5 to the file server 108 via the transmission path 107. The
user information file is actually transmitted to an image
data storage control program (which will be described
later with reference to FIG. 12) of the data processing
apparatus 100 or the file server 108. After the step S202
10 is performed, step S203 causes the processor to transmit
the image data file to the image storage device 104 or to
the file server 108 via the transmission path 107. The
image data file is actually transmitted to the image data
storage control program of the data processing apparatus
15 100 or the file server 108. After the step S203 is
performed, the control of the processor is transferred to
the step S201.

 In either case in which the destination of
the file transmission is the image storage device 104 or
20 the file server 108, the above-described image data
transmission process of FIG. 11 is carried out by the
controller 110 of the data processing apparatus 100 or the
file server 108. When the image data transmission process
of FIG. 11 is carried out, the image data file (containing
25 the acquired image data) and the user information file

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1 (containing the authorized user IDs) can be transmitted to
the storage medium of the image storage device 104 or to
the storage medium of the file server 108.

5 FIG. 12 shows an image data storage process
carried out by the controller 110 or the file server 108
in the filing system of FIG. 1.

10 The image data storage process of FIG. 12
is performed in parallel with the user ID acquisition
process of FIG. 9A and FIG. 9B, and the execution thereof
is started after the end of the step S203 within the image
data transmission process of FIG. 11. Hereinafter, the
15 CPU of the controller 110 or the CPU 203 of the file
server 108 is referred to as the processor. The image
data storage process of FIG. 12 is performed according to
the image data storage control program described above.

20 As shown in FIG. 12, at the start of the
image data storage process, step S301 causes the processor
to receive the image data file which has been transmitted
at the step S203 of FIG. 11. After the step S301 is
performed, step S302 causes the processor to start a
character extraction process with respect to the received
25 image data file. By the character extraction process,
character data is extracted from the image data file by
using a known optical character reader (OCR).

Step S303 causes the processor to determine

1 whether the character extraction process which has been
started at the step S302 ends. When the result at the
step S303 is negative, the processor repeats performing
the step S303. When the result at the step S303 is
5 affirmative, step S304 causes the processor to extract
characters or character strings which frequently appear
among the extracted character data or among specified
regions of the extracted character data. Such characters
or character strings are extracted as the keywords for the
10 image data file.

After the step S304 is performed, step S305 causes the processor to record the image data file and the keywords thereof to the image storage device 104 or the hard disk device 207 of the file server 108. When the 15 image data storage process of FIG. 12 is carried out, the image data file and its keywords (or the frequent-occurrence characters or character strings) can be stored onto the storage medium of the image storage device 104 or onto the storage medium of the hard disk device 207 of the 20 file server 108.

FIG. 13 shows an image data access process carried out by the controller 110 of the filing system of FIG. 1.

The image data access process of FIG. 13 is 25 subsequently performed upon occurrence of a user retrieval

1 request on a data processing apparatus (which is not shown
in FIG. 1 but connected to the data processing apparatus
100 via the transmission path 107) after the acquired
image data is stored onto the storage medium of the image
5 storage device 104 or onto the storage medium of the hard
disk device 207 of the file server 108 in the filing
system. Hereinafter, the CPU of the controller 110 or the
CPU 203 of the file server 108 is referred to as the
processor.

10 As shown in FIG. 13, at the start of the
image data access process, step S401 causes the processor
to determine whether the owner ID of a user who has
requested for accessing the stored image data is
authenticated. When the result at the step S401 is
15 negative, the control of the processor is transferred to
the step S401. When the result at the step S401 is
affirmative, step S402 causes the processor to accept a
keyword (such as those extracted at the step S304 of FIG.
12) input by the user (or the owner whose owner ID was
20 authenticated).

After the step S402 is performed, step S403
causes the processor to carry out a retrieval process
(which will be described later with reference to FIG. 14).
After the step S403 is performed, step S404 causes the
25 processor to create a set of partial image data files

1 based on the result of the retrieval of the image data.
Step S405 causes the processor to display the partial
image data files on a display device of the user's data
processing apparatus. Step S406 causes the processor to
5 accept a document indication (one of the partial image
data files) input by the user on the display device of the
user's data processing apparatus by using its mouse. Step
S407 causes the processor to allow the partial image data
file to be expanded to the original image.

10 After the step S407 is performed, step S408
causes the processor to display the original image on the
display device of the user's data processing apparatus.
While the original image is viewed on the display device,
the user is able to print out it on the user's data
15 processing apparatus or to transmit the same to another
data processing apparatus over the local area network.
After the step S407 is performed, the control of the
processor is transferred to the step S401.

When the above-described image data access
20 process of FIG. 13 is carried out, only the user whose
owner ID is authenticated can retrieve the stored image
data and reproduce or transmit the original image file.
Accordingly, the data processing apparatus and method of
the filing system of the above-described embodiment are
25 effective in providing increased operability and

1 availability of image data that is stored, reproduced,
transmitted or retrieved for the authorized users only,
while ensuring security of such image data in the filing
system.

5 FIG. 14 shows a retrieval process carried
out by the controller 110 or the file server 108 in the
filing system of FIG. 1.

10 The image data access process of FIG. 14 is
performed in parallel with the image data access process
of FIG. 13, and the execution thereof is started at the
start of the step S403 within the image data access
process of FIG. 13. Hereinafter, the CPU of the
controller 110 or the CPU 203 of the file server 108 is
referred to as the processor.

15 As shown in FIG. 14, at the start of the
retrieval process, step S501 causes the processor to
determine whether a retrieval page is displayed. When the
result at the step S501 is negative, the control of the
processor is transferred to the step S501. When the
20 result at the step S501 is affirmative, step S502 causes
the processor to acquire the owner ID which was properly
authenticated at the step S401 of FIG. 13.

25 After the step S502 is performed, step S503
causes the processor to read out the keyword which was
input by the user (or the owner) at the step S402 of FIG.

1 13. Step S504 causes the processor to carry out an image
data retrieval based on the authorized user ID and the
keyword. After the step S504 is performed, step S505
causes the processor to generate one or a plurality of
5 document indications based on the result of the retrieval
of the image data. Step S506 causes the processor to read
out a set of partial image data files from the image
storage device 104 of the data processing apparatus 100 or
the hard disk device 207 of the file server 108. After
10 the step S506 is performed, the control of the processor
is transferred to the step S501.

15 In the above-described embodiment, the
authorized users IDs for the image data that need to be
exchanged are created when the image data are first
captured, and the image data and the authorized user IDs
are stored together on the storage medium of the filing
system in a such a manner that the stored image data are
subsequently accessible by the authorized users using such
IDs. The data processing apparatus and method in the
20 filing system of the present embodiment are effective in
providing increased operability and availability of image
data that is stored, reproduced, transmitted or retrieved
for the authorized users only, while ensuring security of
such image data in the filing system.

25 Next, FIG. 15 shows a second embodiment of

1 the filing system of the present invention. In FIG. 15,
the elements which are essentially the same as
corresponding elements in FIG. 1 are designated by the
same reference numerals, and a description thereof will be
5 omitted.

In the filing system of FIG. 15, the data processing apparatus 100 and the file server 108 are interconnected by the transmission path 107. The transmission path 107 is, for example, an Ethernet cable.
10 A plurality of data processing apparatuses (or the clients) may be connected to the file server 108 via the transmission path 107, which constitute a local area network or an Intranet.

As shown in FIG. 15, in the data processing apparatus 100, the control keyboard 106 of the previous embodiment is eliminated, and the touch panel 105 of the present embodiment incorporates a user/function select page. Similar to the previous embodiment of FIG. 1, the data processing apparatus 100 in the present embodiment has the copying function, the facsimile function and the scanning function, and captures the image data by using one of the copying, facsimile and scanning functions. The user/function select page displayed on the touch panel 105 includes the list of the user selection buttons 302-306
20 and 309-311 (which are the same as those of the embodiment
25

1 of FIG. 3) and a list of operation mode selection buttons
corresponding to the copying, facsimile and scanning
functions.

5 FIG. 16 shows a user/function select page
on the touch panel 105 of the filing system of FIG. 15.

As shown in FIG. 16, the user/function
select page displayed on the touch panel 105 includes a
number of user selection buttons 302, a clear button 303,
a capture-inhibit button 304, an input-history indication
10 region 305 with frequent selection user buttons 306, an
available-disk-space indication region 309, a message
indication region 310, a public-mode button 311, and a
function indication region 601 with a copy mode button
602, a facsimile mode button 603 and a scan mode button
15 604.

In the function indication region 601 of
the touch panel 105, the copy mode button 602 is to change
the displaying page of the touch panel 105 from the
user/function select page to a copy operation page when it
20 is depressed. The operator is able to select the number
of copies or other copying operations of the data
processing apparatus 100 (the scanner 101 and the printer
102) from the copy operation page of the touch panel 105.
The facsimile mode button 603 is to change the displaying
25 page of the touch panel 105 from the user/function select

1 page to a facsimile operation page when it is depressed. The operator is able to select the phone number of the destination or other facsimile operations of the data processing apparatus 100 (the CCU 103) from the facsimile 5 operation page of the touch panel 105. The scan mode button 604 is to change the displaying page of the touch panel 105 from the user/function select page to a scanner operation page when it is depressed. The operator is able to select the resolution of the scanner 101 and other 10 scanning operations thereof from the scanner operation page of the touch panel 105.

FIG. 17 shows a copy operation page on the touch panel 105 of the filing system of FIG. 15.

As described above, when the copy mode 15 button 602 on the touch panel 105 is depressed, the copy operation page of FIG. 17 appears on the touch panel 105. As shown in FIG. 17, the copy operation page displayed on the touch panel 105 includes a mode clear button 701, a start button 702, and ten keys 703. By using the ten keys 20 703, the operator can select the number of copies. By depressing the start button 702, the copying operation of the data processing apparatus 100 can be started. By depressing the mode clear button 701, the displaying page of the touch panel 105 is changed from the copy operation 25 page to the user/function select page of FIG. 16.

1 FIG. 18A and FIG. 18B show a user ID
acquisition and operation mode process carried out by the
controller 110 of the data processing apparatus 100 in the
filing system of FIG. 15.

5 The user ID acquisition and operation mode
process of FIG. 18A and FIG. 18B is performed within an
initial setting routine which is started when a power
switch of the data processing apparatus 100 is turned ON.
The user ID acquisition and operation mode process of FIG.
10 18A and FIG. 18B contains the user ID acquisition process,
similar to that of FIG. 9A and FIG. 9B, and operation mode
procedures related to the operation mode selection buttons
602-604. Hereinafter, the CPU of the controller 110 is
referred to as the processor.

15 At the start of the user ID acquisition and
operation mode process of FIG. 18A, step S601 causes the
processor to read out all the user IDs and the group IDs
from a user information file of the image storage device
104 so that they are transferred to the RAM of the
20 controller 110. In the present embodiment, this user
information file is stored, in advance, on the image
storage device 104, and all the user IDs, the group IDs
and other matters which are predetermined with respect to
the data processing apparatus 100 are contained in the
25 user information file.

1 After the step S601 is performed, step S602
2 causes the processor to display a number of sets of
3 indication areas of the touch panel 105 based on the users
4 IDs and the group IDs read out at the step S601. The user
5 selection buttons 302 are displayed on the touch panel 105
6 in a sequence of the authorized user identifications being
7 defined in the user information file. Step S603 causes
8 the processor to determine whether an initialize command
9 is detected by the processor. The processor (the CPU of
10 the controller 110) includes a clock which measures an
11 elapsed time from a start of operation of the data
12 processing apparatus 100, and the initialize command is
13 transmitted to the processor when the elapsed time
14 measured by the clock exceeds a predetermined reference
15 period. In addition, when the entire data processing on
16 the data processing apparatus 100 is terminated, the
17 initialize command is transmitted to the processor.

18 When the result at the step S603 is
19 affirmative (or when the initialize command is detected),
20 step S613 causes the processor to initialize all the user
21 IDs, the group IDs and the other matters on the RAM into
22 initial values. After the step S613 is performed, step
23 S641 causes the processor to initialize or clear the
24 measurement of the clock, and step S642 causes the
25 processor to initialize the displayed indication areas of

1 the touch panel 105 into the initial condition. After the
step S642 is performed, the control of the processor is
transferred to the step S603.

When the result at the step S603 is
5 negative (or when the initialize command is not detected),
step S604 causes the processor to determine whether any
input is given onto the touch panel 105. When the result
at the step S604 is affirmative, step S605 is performed.
Otherwise the control of the processor is transferred to
10 the step S603.

Step S605 causes the processor to determine
whether the displaying page of the touch panel 105 is
changed to one of the copy, facsimile and scan operation
pages. When the result at the step S605 is negative, step
15 S606 is performed. When the result at the step S605 is
affirmative, step S632 is performed.

Step S606 causes the processor to determine
whether the clear button 303 is depressed. When the clear
button 303 is depressed, the control of the processor is
20 transferred to the above steps S613, S641 and S642, so
that all the user IDs, the group IDs and the other matters
on the RAM are initialized, the measurement of the clock
is cleared, and the displayed indication areas of the
touch panel 105 is cleared. Otherwise step S607 causes
25 the processor to determine whether the capture-inhibit

1 button 304 is depressed.

When the capture-inhibit button 304 is depressed at the step S607, step S614 causes the processor to determine whether the capture inhibition condition 5 already occurs on the data processing apparatus 100. When the result at the step S614 is negative, step S615 causes the processor to inhibit the scanner 101 from capturing the image data, and the data processing apparatus 100 is set in the capture inhibition condition. When the result 10 at the step S614 is affirmative, step S616 causes the processor to cancel the capture inhibition condition. In the latter case, the processor allows the scanner 101 to capture the image data, and the data processing apparatus 100 is returned to the initial condition. After the step 15 S615 or the step S616 is performed, the control of the processor is transferred to the above steps S641 and S642.

When the capture-inhibit button 304 is not depressed at the step S607, step S608 causes the processor to determine whether the capture inhibition condition 20 already occurs on the data processing apparatus 100. When the result at the step S608 is affirmative, the control of the processor is transferred to the above steps S641 and S642. Otherwise the control of the processor is transferred to step S609 shown in FIG. 18B.

25 When the result at the step S605 is

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1 affirmative (or when the displaying page of the touch
panel 105 is changed to one of the copy, facsimile and
scan operation pages), step S632 causes the processor to
determine whether the clear button 701 is depressed. When
5 the clear button 701 is depressed, step 633 causes the
processor to change the displaying page of the touch panel
105 to the user/function select page. After the step S633
is performed, the control of the processor is transferred
to the above steps S641 and S642.

10 When the result at the step S632 is
negative (or when the clear button 701 is not depressed),
step S634 causes the processor to determine whether the
copy operation page currently occur on the touch panel
105. When the result at the step S634 is affirmative,
15 step S635 causes the processor to accept an input to the
copy operation page of the touch panel 105. After the
step S635 is performed, the control of the processor is
transferred to the above steps S641 and S642. When the
result at the step S634 is negative, the control of the
20 processor is transferred to step S636 shown in FIG. 18B.

As shown in FIG. 18B, step S636 causes the
processor to determine whether the facsimile operation
page currently occur on the touch panel 105. When the
result at the step S636 is affirmative, step S637 causes
25 the processor to accept an input to the facsimile

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1 operation page of the touch panel 105. After the step
2 S637 is performed, the control of the processor is
3 transferred to the above steps S641 and S642. When the
4 result at the step S636 is negative, step S638 causes the
5 processor to determine whether the scanner operation page
6 currently occur on the touch panel 105. When the result
7 at the step S638 is affirmative, step S639 causes the
8 processor to accept an input to the scanner operation page
9 of the touch panel 105. After the step S639 is performed,
10 the control of the processor is transferred to the above
11 steps S641 and S642. When the result at the step S638 is
12 negative, the control of the processor is transferred to
13 the above steps S641 and S642.

14 As shown in FIG. 18B, step S609 causes the
15 processor to determine whether any user ID acquisition is
16 already performed. When the result at the step S609 is
17 negative (or when the user ID is selected for the first
18 time), step S610 causes the processor to determine whether
19 the user selection buttons 302 on the touch panel 105 are
20 depressed. When the user selection buttons 302 are not
21 depressed, the control of the processor is transferred to
22 the above steps S641 and S642. When any of the user
23 selection buttons 302 are depressed, step S611 causes the
24 processor to acquire one or a plurality of the operator
25 IDs corresponding to the depressed user selection buttons

1 302. After the step S611 is performed, step S612 causes
the processor to increment a user selection count on the
RAM for each of the acquired operator IDs. That is, the
processor records the latest user selection counts (the
5 input history) of the operator IDs to the RAM. After the
step S612 is performed, the control of the processor is
transferred to the above steps S641 and S642.

When any user ID acquisition is already
performed (or when the user ID is subsequently selected)
10 at the step S609, step S617 causes the processor to
determine whether the user selection buttons 302 or the
group selection buttons 401 on the touch panel 105 are
depressed. When the selection buttons 302 or 401 are
depressed at the step S617, step S618 causes the processor
15 to determine whether the owner IDs (one or a plurality of
the owner IDs) corresponding to the depressed selection
buttons 302 or 401 are already acquired. When the owner
IDs are already acquired at the step S618, step S619
causes the processor to omit the owner IDs from the owner
20 ID acquisition. When the owner IDs are not yet acquired
(or when the owner IDs are selected for the first time) at
the step S618, step S620 causes the processor to acquire
the owner IDs (one or a plurality of the owner IDs)
corresponding to the depressed selection buttons 302 or
25 401. After the step S620 is performed, step S640 causes

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1 the processor to increment a user selection count on the
RAM for each of the acquired owner IDs. That is, the
processor records the latest user selection counts (the
input history) of the owner IDs to the RAM at the step
5 S640. After the step S619 or the step S640 is performed,
the control of the processor is transferred to the above
steps S641 and S642.

When none of the selection buttons 302 and
401 are depressed at the step S617, step S621 causes the
10 processor to determine whether the public-mode button 311
on the touch panel 105 is depressed. When the public-mode
button 311 is not depressed, step S622 is performed. When
the public-mode button 311 is depressed, step S623 causes
the processor to determine whether the public mode ID is
15 already acquired. When the result at the step S623 is
affirmative (or when the button 311 is subsequently
depressed), step S626 causes the processor to cancel the
acquired public mode ID on the RAM so that the captured
image data is not correlated with the public mode ID (the
20 non-public mode). After the step S626 is performed, the
control of the processor is transferred to the above steps
S641 and S642.

When the result at the step S623 is
negative (or when the button 311 is depressed for the
25 first time), step S625 causes the processor to acquire the

1 public mode ID so that the captured image data is
2 correlated with the public mode ID, and all the authorized
3 users are allowed to access the stored image data (the
4 public mode). After the step S625 is performed, step S627
5 causes the processor to initialize all the user IDs, the
6 group IDs and the other matters on the RAM into the
7 initial values. After the step S627 is performed, the
8 control of the processor is transferred to the above steps
9 S641 and S642.

10 When the result at the step S621 is
11 negative, step S622 causes the processor to determine
12 whether the copy mode button 602 on the touch panel 105 is
13 depressed. When the copy mode button 602 is not
14 depressed, step S624 is performed. When the copy mode
15 button 602 is depressed, step S629 causes the processor to
16 change the displaying page of the touch panel 105 to the
17 copy operation page. After the step S629 is performed,
18 the control of the processor is transferred to the above
19 steps S641 and S642.

20 Step S624 causes the processor to determine
21 whether the facsimile mode button 602 on the touch panel
22 105 is depressed. When the facsimile mode button 603 is
23 not depressed, step S628 is performed. When the facsimile
24 mode button 603 is depressed, step S630 causes the
25 processor to change the displaying page of the touch panel

1 105 to the facsimile operation page. After the step S630
is performed, the control of the processor is transferred
to the above steps S641 and S642.

Step S628 causes the processor to determine
5 whether the scan mode button 604 on the touch panel 105 is
depressed. When the scan mode button 604 is not
depressed, the control of the processor is transferred to
the above steps S641 and S642. When the scan mode button
604 is depressed, step S631 causes the processor to change
10 the displaying page of the touch panel 105 to the scanner
operation page. After the step S631 is performed, the
control of the processor is transferred to the above steps
S641 and S642.

As described above, in the user ID
15 acquisition and operation mode process of FIG. 18A and
FIG. 18B, when any of the selection buttons 302 and 306
are depressed at the first attempt, one or a plurality of
the operator IDs corresponding to the depressed buttons
are acquired by the controller 110, and when any of the
20 selection buttons 302 and 401 are depressed at the second
attempt, one or a plurality of the owner IDs corresponding
to the depressed buttons are acquired by the controller
110. When the initialize command is detected upon the
time-over event, the clear button depression or the entire
25 data processing end, all the user IDs, the group IDs and

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1 the other matters on the RAM are initialized by the
controller 110. Further, in the user ID acquisition and
operation mode process of FIG. 18A and FIG. 18B, when one
of the operation mode selection buttons 602-604 is
5 depressed, the displaying page of the touch panel 105 is
changed to a corresponding operation mode page so that the
user can select the desired input to the operation mode
page of the touch panel 105.

Next, FIG. 19 shows a third embodiment of
10 the filing system of the present invention. In FIG. 19,
the elements which are essentially the same as
corresponding elements in FIG. 1 are designated by the
same reference numerals, and a description thereof will be
omitted.

15 In the filing system of FIG. 19, the data
processing apparatus 100 and the file server 108 are
interconnected by the transmission path 107. The
transmission path 107 is, for example, an Ethernet cable.
A plurality of data processing apparatuses (or the
20 clients) may be connected to the file server 108 via the
transmission path 107, which constitute a local area
network or an Intranet.

As shown in FIG. 19, in the data processing
apparatus 100 of the present embodiment, the scanner 101,
25 the touch panel 105 and the control keyboard 106 in the

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1 previous embodiment of FIG. 1 are eliminated. The data
processing apparatus 100 in the present embodiment has at
least the facsimile receiving function of the CCU 103, and
captures the image data by using the facsimile receiving
5 function of the CCU 103.

FIG. 20 shows an image data capture process
carried out by the controller 110 of the filing system of
FIG. 19.

10 The image data capture process of FIG. 20
is performed in parallel with a user ID acquisition
process which is similar to those of the first and second
embodiments, and the execution thereof is started upon
occurrence of the facsimile receiving processing of the
data processing apparatus 100. Hereinafter, the CPU of
15 the controller 110 is referred to as the processor.

As shown in FIG. 20, at the start of the
image data capture process, step S701 causes the processor
to determine whether a start of the facsimile receiving of
the CCU 103 is detected. When the result at the step S701
20 is negative, the processor repeats performing the step
S701. When the result at the step S701 is affirmative,
step S702 causes the processor to determine whether an end
of the facsimile receiving of the CCU 103 is detected.
When the result at the step S702 is negative, the
25 processor repeats performing the step S702.

1 When the result at the step S702 is
affirmative, step S703 causes the processor to create an
image data file on the image storage device 104 based on
the acquired image data during the facsimile receiving.

5 After the step S703 is performed, step S704 causes the
processor to acquire a standard user ID (the default
setting data) as the operator ID. After the step S704 is
performed, step S705 causes the processor to add the user
information file to the image data file. After the step
10 S705 is performed, step S706 causes the processor to
transmit a file creation notice to the image data
transmission control program. After the step S706 is
performed, the control of the processor is transferred to
the above step S701.

15 When the above-described image data capture
process of FIG. 20 is carried out, the image data file
(containing the acquired image data) with the user
information file attached thereto can be stored on the
storage medium of the image storage device 104 or on the
20 storage medium of the file server 108. As any authorized
user ID is not acquired when the facsimile receiving
processing of the CCU 103 is performed, the standard user
ID is acquired as the operator ID and the resulting user
information file is stored.

25 The above-described image data capture

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1 process of FIG. 20 is carried out only when the facsimile
receiving processing of the CCU 103 is started. However,
the present invention is not limited to this embodiment.
For example, see the image data capture process of FIG. 10
5 for the first embodiment of FIG. 1.

FIG. 21 shows a standard user ID setting
page on a display device of a client data processing
apparatus in the filing system of FIG. 19.

In the present embodiment, the controller
10 110 of the data processing apparatus 100 acquires a
standard user ID which is predetermined by the operator on
the standard user ID setting page of the display device of
the client data processing apparatus in the filing system
of FIG. 19. The standard user ID is transmitted to the
15 controller 110 of the remote data processing apparatus 100
via the transmission path 107 by using a Web server
function of each of the data processing apparatuses in the
filing system of FIG. 19.

In the present embodiment, each of the
20 plurality of data processing apparatuses connected to the
file server 108 via the transmission path 107 includes the
Web server function. As shown in FIG. 21, the client data
processing apparatus includes a Web browser 801, and a
standard user ID setting page 802 is displayed on the
25 display device of the client data processing apparatus.

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1 The operator on the standard user ID setting page 802 can
input a desired standard user ID from a standard user ID
input region 803. The standard user ID may be any user ID
or user name. When the standard user ID is properly
5 input, the operator clicks a set button 805 on the
standard user ID setting page 802 of the display device by
using a mouse. When an error of the input standard user
ID occurs, the operator clicks a clear button 804 on the
standard user ID setting page 802 by using the mouse. If
10 the clear button 804 is clicked, the input to the standard user
ID input region 803 is cleared, and the standard user
ID input region 803 is returned to its initial state.

In the above-described embodiment, the
controller 110 of the data processing apparatus 100 can
15 acquire a standard user ID which is predetermined by the
operator on the standard user ID setting page 802 of the
display device of the client data processing apparatus.
The standard user ID is transmitted to the controller 110
of the remote data processing apparatus 100 via the
20 transmission path 107 by using the Web server function.
IN addition, the operator on the standard user ID setting
page 802 of the display device of the client data
processing apparatus can modify the standard user ID or
add a desired standard user ID to the filing system.

25 The present invention is not limited to the

1 above-described embodiments, and variations and
modifications may be made without departing from the scope
of the present invention.

Further, the present invention is based on
5 Japanese priority application No.10-279,019, filed on
September 30, 1998, the entire contents of which are
hereby incorporated by reference.

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